Terrace

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 600

TERRACES

A terrace is an earth embankment, channel, or a combination ridge and channel constructed across the slope to intercept runoff water.

PRACTICE INFORMATION

This practice generally applies to cropland but may also be used on other areas where field crops are grown such as wildlife or recreation lands.

Terraces are installed for one or more of the following purposes: 1) Reduce slope length for erosion control, 2) Reduce sediment content in runoff water, 3) Improve water quality, 4) Intercept and conduct runoff to a safe outlet, 5) Retain runoff for moisture conservation, 6) Prevent gully development, 7) Reform the land surface for better farmability, and 8) Reduce flooding.

A variety of terrace configurations has developed as a result of research and field experience. Four common types of terraces include **broad-based** which are farmed on both sides and used on more uniform gently sloping fields; **flat channel** which are used to conserve moisture; **steep backslope** which result in a benching effect; and **narrow based** which have permanent cover planted on both sides of the ridge.

Terraces may be parallel on fairly uniform terrain or vary from parallel when the terrain is undulating. Since parallel terraces are more acceptable, designs often provide for cuts and fills to improve terrace alignment and farmability. Channel grades may be uniform or variable as long as the water velocity is nonerosive and meet other design criteria. The runoff from terraces may be handled by grassed waterways or underground pipe outlets depending on site conditions and economics. Soil infiltration may also be utilized for disposal of runoff when level terraces are installed and the soil is sufficiently permeable to remove the water stored in the channel before crop damage occurs.

Terraces require careful design, layout and construction. Additional information including standards and specifications are on file in the local NRCS Field office Technical Guide.

The following pages contain the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, soil, etc. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: *recorded in Microsoft word 6.0 - use tabs to change cells/fields*

STATE	Iowa	FIELD OFFICE		DATE	12/5/96

PRACTICE: 600 - Terraces	NOTES: These effects do not consider short term soil damage from construction activities
RESOURCE: SOIL **RESOURCE CONCERN: EROSION**	**Help Message: Click on form field for choice lists. Tab key to move around. "N/A" is the default.**

RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SHEET AND RILL	moderate reduction in sheet and rill erosion
WIND	insignificant
EPHEMERAL GULLY	significant reduction in ephemeral gully erosion
CLASSIC GULLY	significant reduction in classic gully erosion
STREAMBANK	significant reduction in streambank erosion
IRRIGATION INDUCED	insignificant
SOIL MASS MOVEMENT	slight increase in mass movement of soil
ROADBANK/CONSTRUCTION	insignificant
OTHER	
RESOURCE CONCERN: **SOIL CONDITION**	
SOIL TILTH	insignificant
SOIL COMPACTION	insignificant
SOIL CONTAMINATION	
• SALTS	slight reduction in soil salinity
• ORGANICS	insignificant
• FERTILIZERS	insignificant
• PESTICIDES	insignificant
• OTHER	
DEPOSITION/DAMAGE	
• ONSITE	significant reduction/onsite deposition damage
• OFFSITE	significant decrease/offsite deposition damage
DEPOSITION/SAFETY	
• ONSITE	significantly improve onsite safety/deposition
• OFFSITE	sign. improve offsite safety hazard/deposition
OTHER	
RESOURCE: **WATER** RESOURCE CONCERN: **WATER QUANTITY**	
SEEPS	moderate increase in seepage hazard
RUNOFF/FLOODING	sign. decrease in runoff/flooding
EXCESS SUBSURFACE WATER	moderate increase in excess subsurface water
INADEQUATE OUTLETS	significant improvement in H20 outlet concern
WATER MGT. IRRIGATION	
• SURFACE	N/A
• SPRINKLER	insignificant
WATER MGT. NON-IRRIGATED	significant improvement in moisture use
RESTRICTED FLOW CAPACITY (drainage)	
• ONSITE	moderate improvement in surface drainage
• OFFSITE	moderate improvement in surface drainage
RESTRICTED STORAGE	sign. reduction in sedimentation of H20 storage
OTHER	

RESOURCE: **WATER** RESOURCE CONCERN**: WATER QUALITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
GROUNDWATER CONTAMINANTS	
• PESTICIDES	slight potential increase/GWater contam./pesticide
• NUTRIENTS AND ORGANICS	slight poten. increase in GWater contam./nutr,org.
• SALINITY	insignificant
• HEAVY METALS	insignificant
• PATHOGENS	insignificant
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	moderate reduction in SWater contam./pesticides
• NUTRIENTS AND ORGANICS	moderate reduction in SWater contam./nutri.,organ.
• SUSPENDED SEDIMENTS	sign. reduction in SWater contam./susp. sedi.
• LOW DISSOLVED OXYGEN	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• WATER TEMPERATURE	insignificant
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	moderate inprovement in Aqua. Hab. Suit.
OTHER	
RESOURCE: **AIR** RESOURCE CONCERN: **AIR QUALITY**	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: **AIR CONDITION**	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: **PLANT** RESOURCE CONCERN: **SUITABILITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SITE ADAPTATION	insignificant
PLANT USE	insignificant
OTHER	
RESOURCE CONCERN: **CONDITION**	
PRODUCTIVITY	moder. improvement in plant cond./ productivity
HEALTH, VIGOR, SURVIVAL	moder. improvement in plant health,vigor,survival
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
ESTAB., GROWTH, HARVEST	slight improvement in plant estab.,growth,harvest
NUTRIENT MANAGEMENT	insignificant
PESTS	insignificant
THREAT/ENDANGERED PLANTS	N/A
OTHER	
RESOURCE: **ANIMAL** RESOURCE CONCERN: **HABITAT**	
FOOD	insignficant
COVER/SHELTER	insignificant
WATER (QUANTITY & QUALITY)	insignificant
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
POPULATION BALANCE	insignificant
THREAT/ENDANGERED ANIMALS	insignificant
HEALTH	insignificant
OTHER	
RESOURCE: **HUMAN** RESOURCE CONCERNS**: ECONOMIC CONSIDERATIONS**	
PLAN / COST EFFECTIVENESS	moderately cost effective
CLIENT FINANCIAL CONDITION	moderately cost effective
MARKETS FOR PRODUCTS	N/A
AVAILABLE LABOR	slight increase in labor requirement
AVAILABLE EQUIPMENT	insignificant

RESOURCE: **HUMAN** RESOURCE CONCERN: **SOCIAL CONSIDERATIONS**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
PUBLIC HEALTH AND SAFETY	insignificant
PRIVATE/PUBLIC VALUES	insignificant
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
RESOURCE CONCERN: **CULTURAL CONSIDERATIONS**	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	